

FIG. 1

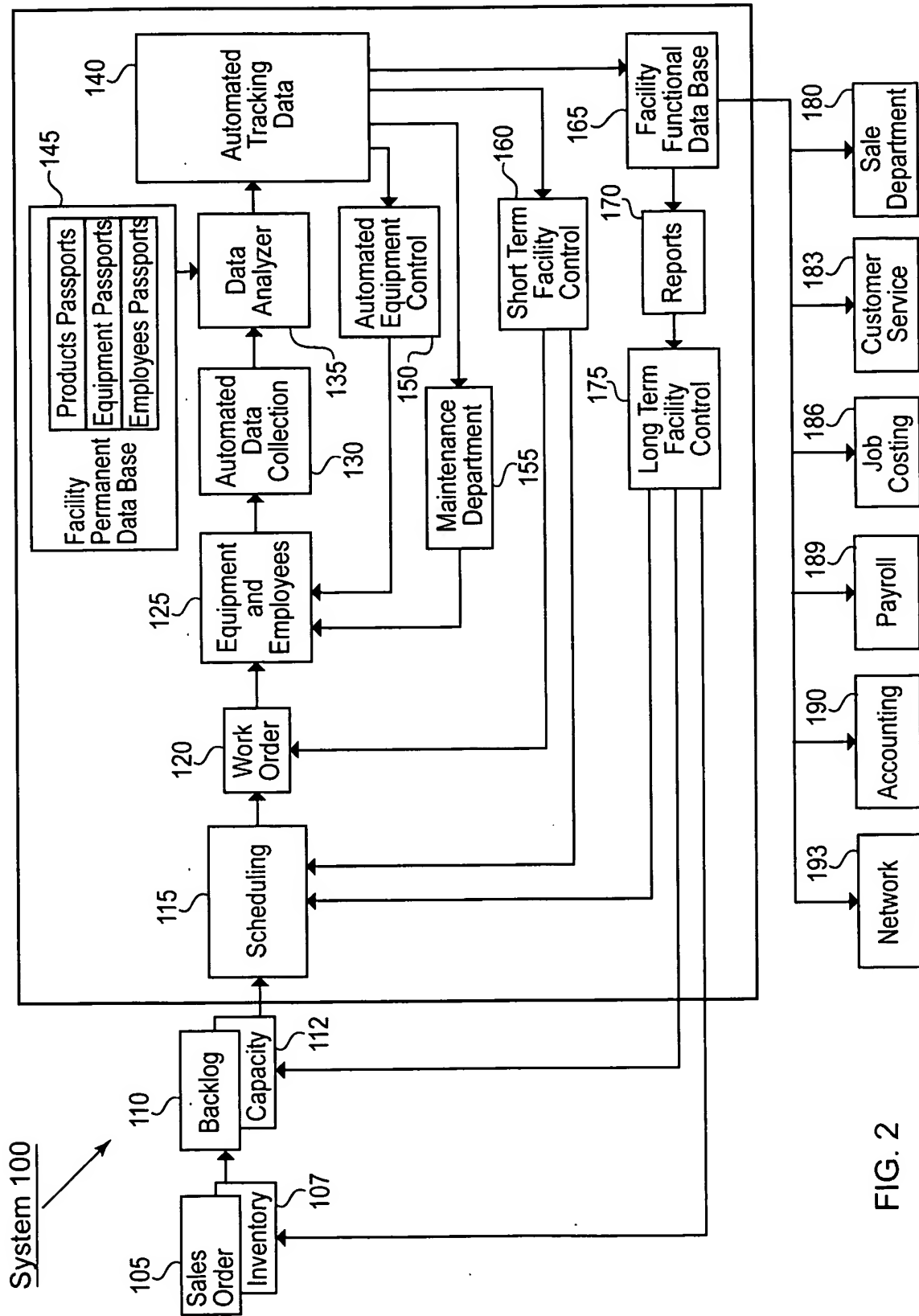


FIG. 2

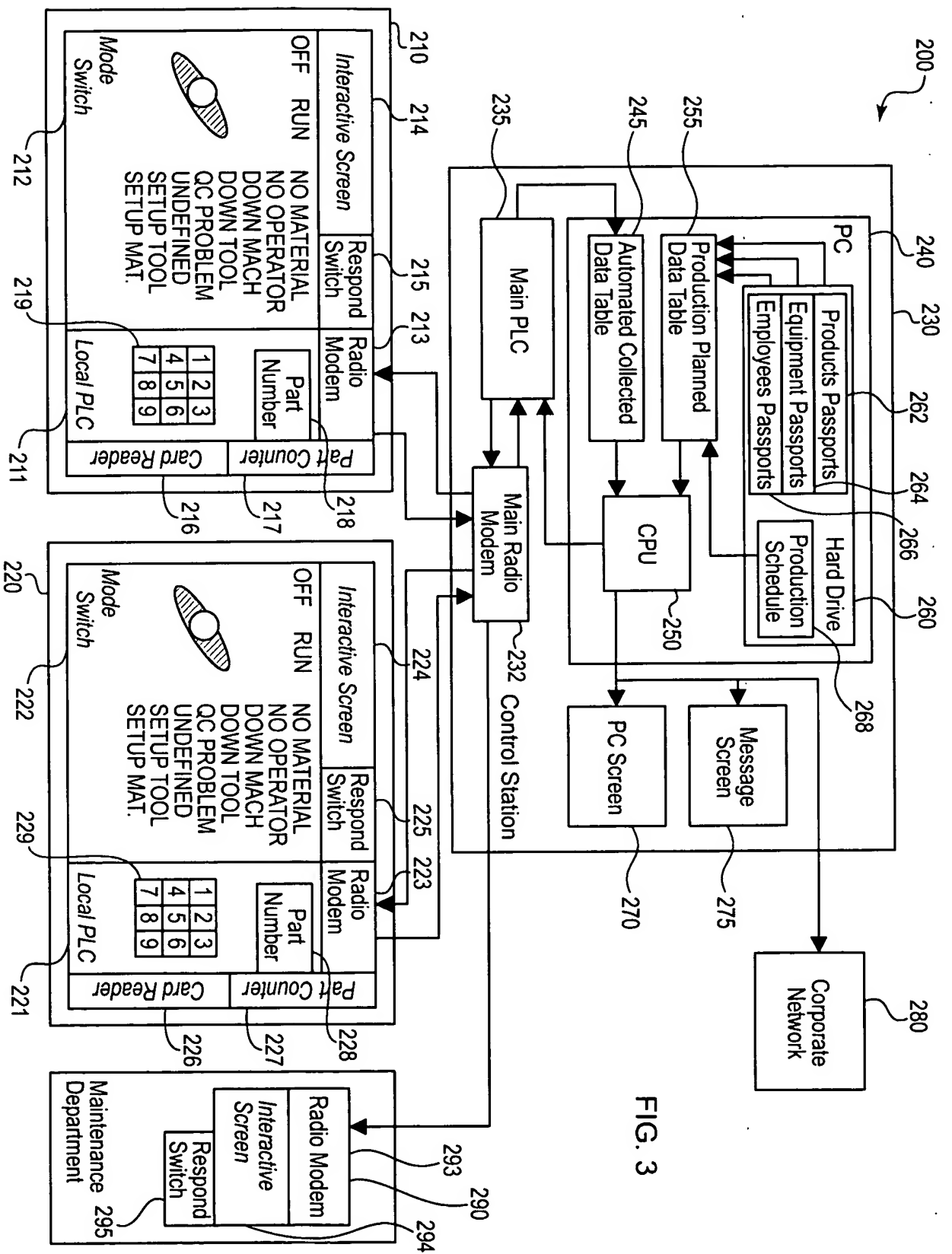


FIG. 3

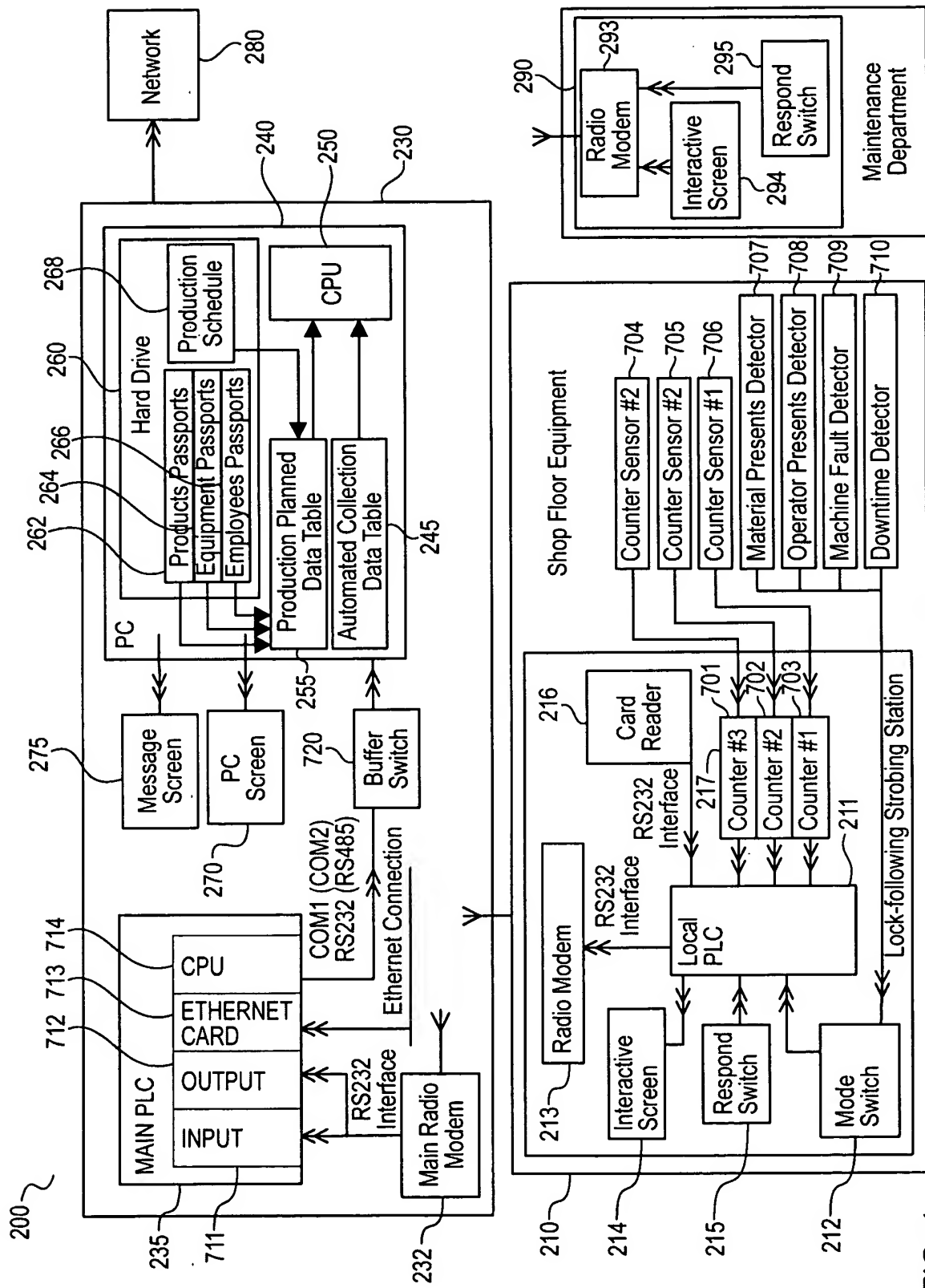


FIG. 4

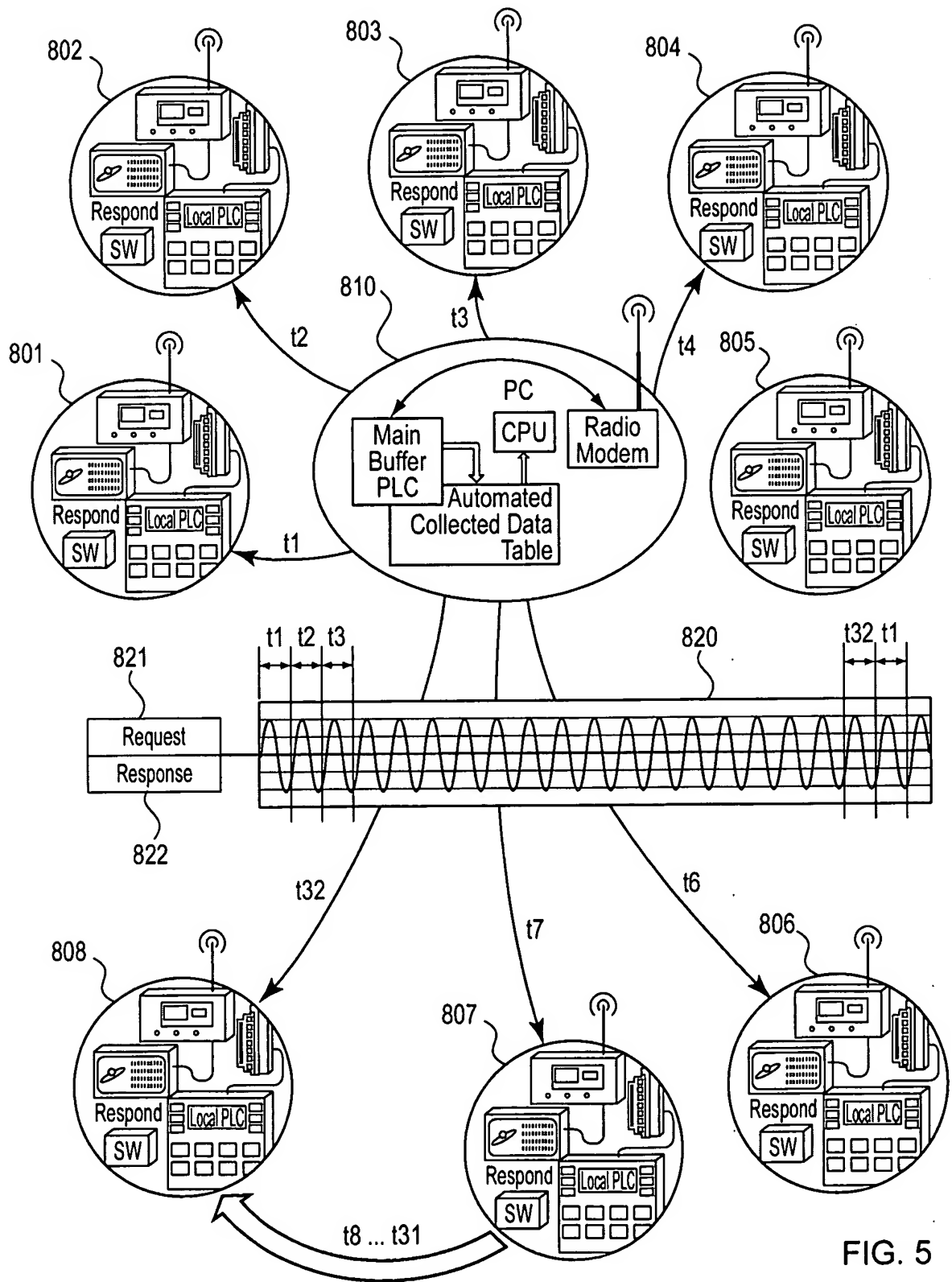


FIG. 5

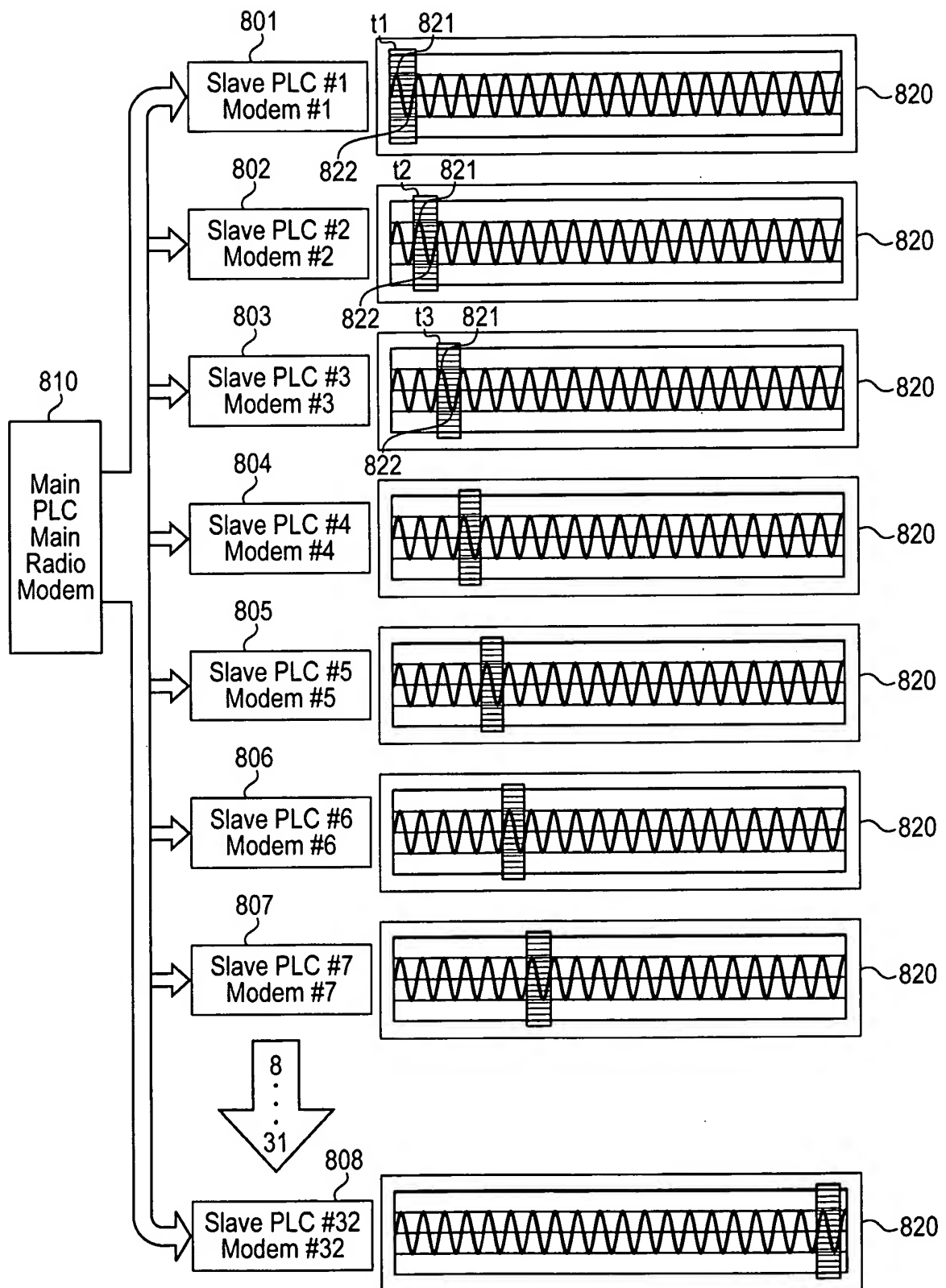


FIG. 6

831	CT Current Time								
832	Job Order								
833	Part ID								
834	Operation ID								
835	Work Post (Equipment) ID								
836	Operator	Personal Equipment Time							
		ID							
837	Parts Produced								
838	Schedule Shift time								
839	Production Run time								
840	Operator	No Operator							
		No Material							
		Machine failure							
		Tool failure							
		QC Problem							
		Undefined							
841	Set-up time	Tool/Machine							
		Material							
842	PM time								
843	Dead time								
844	Set-up time	Technician ID							
		Personal Equipment Repair Time							

FIG. 7

ABC Corporation

Employees Passports

Plant

Employee

Period

Sort

Edit

New

Copy

Delete

Print

ID	Name	Division	Position	Hourly Rate	Date of Hire	Seniority
20356	Bob G Smith	Machining	Operator	7.25	10/23/99	3
20357	Tom Parker	Machining	Line Lieder	10.50	03/04/98	5
20358	Jim Eagle	Machining	Operator	8.50	05/06/98	4
20359	Bill Carter	Machining	Operator	6.00	10/01/01	1

Details

ID

20358

Hourly Rate

8.50

Name

Jim Eagle

Date of Hire

05/06/98

Division

Machining

Seniority

4

Position

Operator

Description

Needs close supervision

OK

Cancel

FIG. 8

300



ABC Corporation

Equipment Passports

Plant

Equipment

Period

Sort

Edit

New

Copy

Delete

Print

ID	Name	Number	Division	Operation	Available Time	Depreciation	Date of New	Complexity	Post
90356	Lathe	#1	Machining	OD	470	7.25	10/23/79	3	2
90357	CNC Mill	#2	Machining	Base	450	10.50	03/04/68	5	4
90358	CNC Mill	#6	Machining	Inside	450	8.50	05/06/98	4	8
90359	Drill Press	#12	Machining	Holes	480	6.00	10/01/66	1	6

Details

ID

90358

Depreciation

8.50

Name

CNC Mill

Date of New

05/06/98

Division

Machining

Complexity

4

Operation

Inside

Post Number

8

Available Time

450

Description

VMC Haas 20x30x25

OK

Cancel

320

FIG. 9

ABC Corporation

Products Passports

Plant

Part Number

Period

Sort

Edit

New

Copy

Delete

Print

ID

Name

Number

Division

#Operations

Production Times

Labor Cost

Assemble Number

000001

Piston

EN203

Machining#1

5

120

9.20

EN001

000002

Cylinder

EN406

Machining#1

4

050

4.30

EN001

000003

Arm

DX123

Machining#2

4

044

4.35

DX005

000004

Shaft

DX432

Machining#2

6

102

8.70

DX005

Details

ID

00003

Production Time

044

Name

Arm

Labor Cost

4.35

Division

Machining #2

Assemble Number

DX005

#Operations

4

Operations Enter

Description

16" Steel Arm

OK

Cancel

FIG. 10

ABC Corporation

Products Passports

Operations

Part: DX005 - Arm

Edit

New

Copy

Delete

Print

ID

Name

Number

Division

Equipment

Production Time

Labor Cost

Post

0001

Cut off

010

Ship.-Receiv.

Saw #1

5

0.62

no

0002

Milling

020

Machining #2

Vert.Mill #4

23

3.45

3

0003

Drilling

030

Machining #2

Drill Press #2

12

1.70

5

0004

Deburring

040

Machining #2

Table #5

4

0.58

9

Details

ID

0003

Equipment

Drill Press #2

Name

Drilling

Production Time

12

Division

030

Labor Cost

1.70

#Operations

Machining #2

Post Number

5

Description

Drill 28 holes Dia. 0.38"

OK

Cancel

310

333

341

342

343

344

340

FIG. 11

Table Format Schedule 350



ABC Enterprises Scheduling									
----------------------------	--	--	--	--	--	--	--	--	--

351 ~ FIRST SHIFT

04/24/01      04/25/01      04/26/01      04/27/01      04/28/01      4/24-4/28

	Monday Type	Quant.	Tuesday Type	Quant.	Wednesday Type	Quant.	Thursday Type	Quant.	Friday Type	Quant.	TOTAL PER WEEK Type	Quant.
361 ~ Press Line	PR33	1250	PR33	1250	PR33	1250	PR33	1250	PR33	1250	PR33	6250
362 ~ Weld Line	XE42	1250	XE42	1250	XE42	1250	XE42	1250	XE42	1250	XE42	6250
363 ~ Trim Line	PL2	1250	PL2	1250	PL2	1250	PL2	1250	PL2	1250	PL2	6250
364 ~ Paint Line	F6U3	1250	F6P2	1250	F2Y7	1250	R1B1	1250	B6W2	1250	B6W2	6250
365 ~ Packaging Line	F6U3	1250	F6P2	1250	F2Y7	1250	R1B1	1250	B6W2	1250	B6W2	6250

352 ~ SECOND SHIFT

04/24/01      04/25/01      04/26/01      04/27/01      04/28/01      4/24-4/28

	Monday Type	Quant.	Tuesday Type	Quant.	Wednesday Type	Quant.	Thursday Type	Quant.	Friday Type	Quant.	TOTAL PER WEEK Type	Quant.
361 ~ Press Line	PR33	1250	PR33	1250	PR33	1250	PR33	1250	PR33	1250	PR33	6250
362 ~ Weld Line	XE42	1250	XE42	1250	XE42	1250	XE42	1250	XE42	1250	XE42	6250
363 ~ Trim Line	PL2	1250	PL2	1250	PL2	1250	PL2	1250	PL2	1250	PL2	6250
364 ~ Paint Line	F6U3	1250	F6P2	1250	F2Y7	1250	R1B1	1250	B6W2	1250	B6W2	6250
365 ~ Packaging Line	F6U3	1250	F6P2	1250	F2Y7	1250	R1B1	1250	B6W2	1250	B6W2	6250

FIG. 12

ABC Enterprises Product Flow Tracking 400

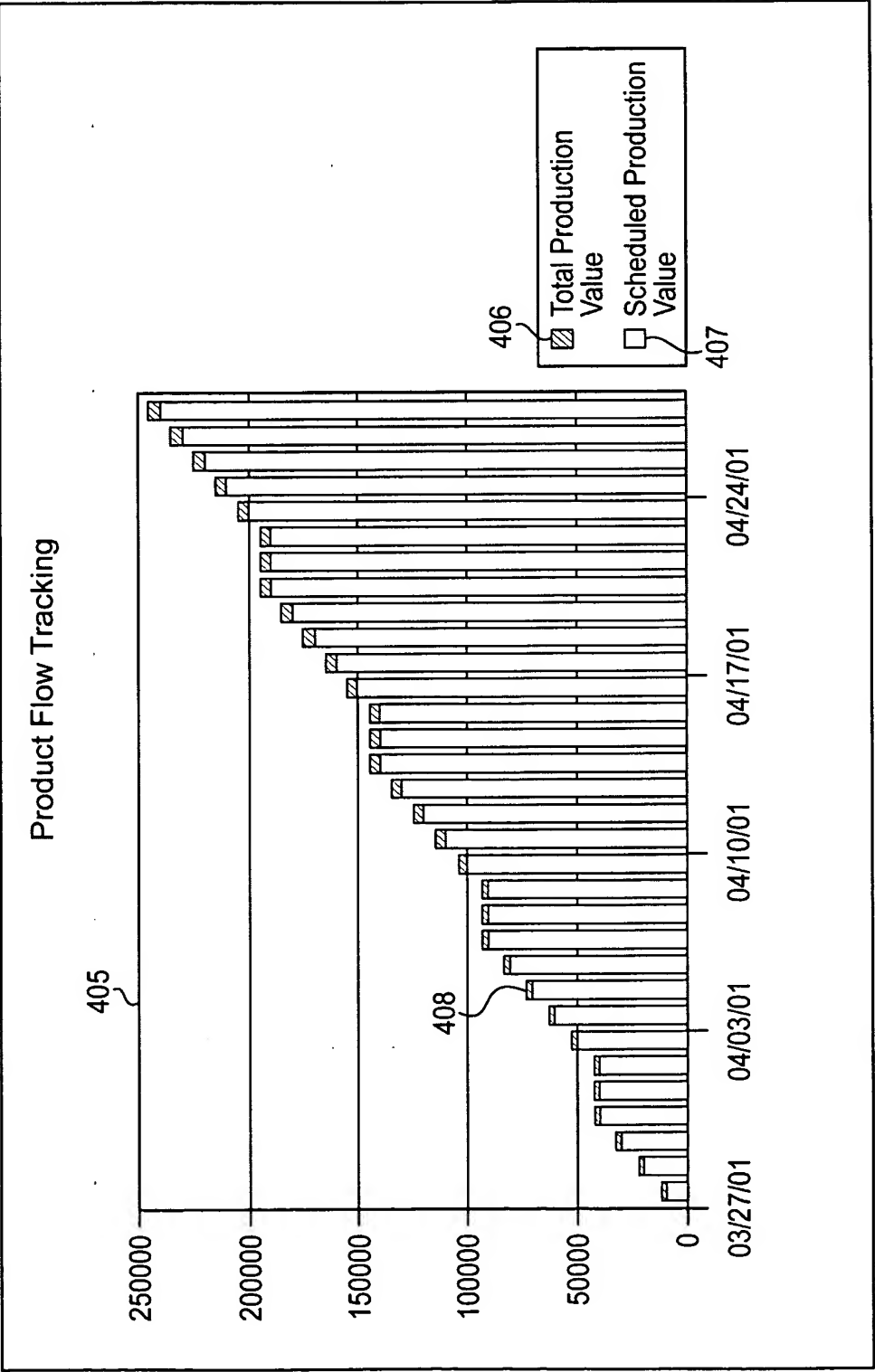


FIG. 13a

410

## ABC Enterprises Product Flow Tracking

date	day	daily production value	total production value	scheduled production value	percent manufactured
03/27/01	tue	8500	8500	10000	85%
03/28/01	wed	10000	18500	20000	93%
03/29/01	thurs	9100	27600	30000	92%
03/30/01	fri	10000	376000	40000	94%
03/31/01	sat	0	376000	40000	94%
04/01/01	sun	0	376000	40000	94%
04/02/01	mon	10000	47600	50000	95%
04/03/01	tue	10000	57600	60000	96%
04/04/01	wed	9000	66600	70000	95%
04/05/01	thurs	10000	76600	80000	96%
04/06/01	fri	10000	86600	90000	96%
04/07/01	sat	0	86600	90000	96%
04/08/01	sun	0	86600	90000	96%
04/09/01	mon	10000	96600	100000	97%
04/10/01	tue	91000	105700	110000	96%
04/11/01	wed	10000	115700	120000	96%
04/12/01	thurs	9510	125210	130000	96%
04/13/01	fri	10000	135210	140000	97%
04/14/01	sat	0	135210	140000	97%
04/15/01	sun	0	135210	140000	97%
04/16/01	mon	10000	145210	150000	97%
04/17/01	tue	10000	155210	160000	97%
04/18/01	wed	98000	165010	170000	97%
04/19/01	thurs	10000	175010	180000	97%
04/20/01	fri	10000	185010	190000	97%
04/21/01	sat	0	185010	190000	97%
04/22/01	sun	0	185010	190000	97%
04/23/01	mon	10000	195010	200000	98%
04/24/01	tue	9850	204860	210000	98%
04/25/01	wed	9853	214713	220000	98%
04/26/01	thurs	10000	224713	230000	98%
04/27/01	fri	10000	234713	240000	98%

412

418

417

416

415

414

FIG. 13b

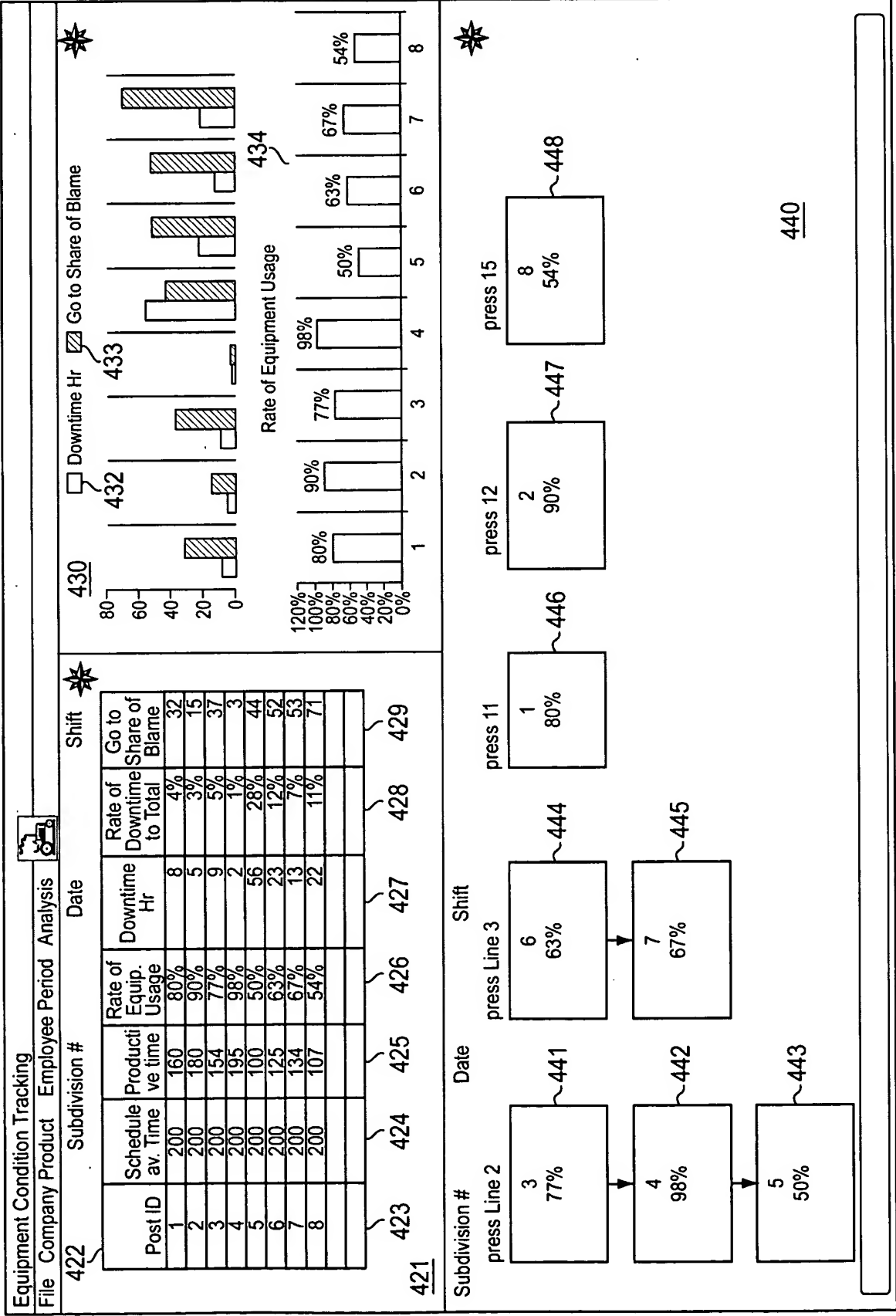


FIG. 14


450			
ABC Enterprises Manufacturing Efficiency and Costing			
File Company View Product Employees Period Analysis			
			
Subdivision	Scheduled Efficiency	Actual Efficiency	Percent Efficiency
Press Line	.21 man hour/part	.27 man hour/part	-29%
Weld Line	.25 man hour/part	.32 man hour/part	-28%
Weld Line	.25 man hour/part	.22 man hour/part	-12%
Paint Line	.15 man hour/part	.19 man hour/part	-26%
Assembly Line	.30 man hour/part	.28 man hour/part	7%
Package Line	.20 man hour/part	.18 man hour/part	10%
452	453	454	455

FIG. 15a





# ABC Enterprises Manufacturing Efficiency and Costing

File Company View Product Employees Period Analysis

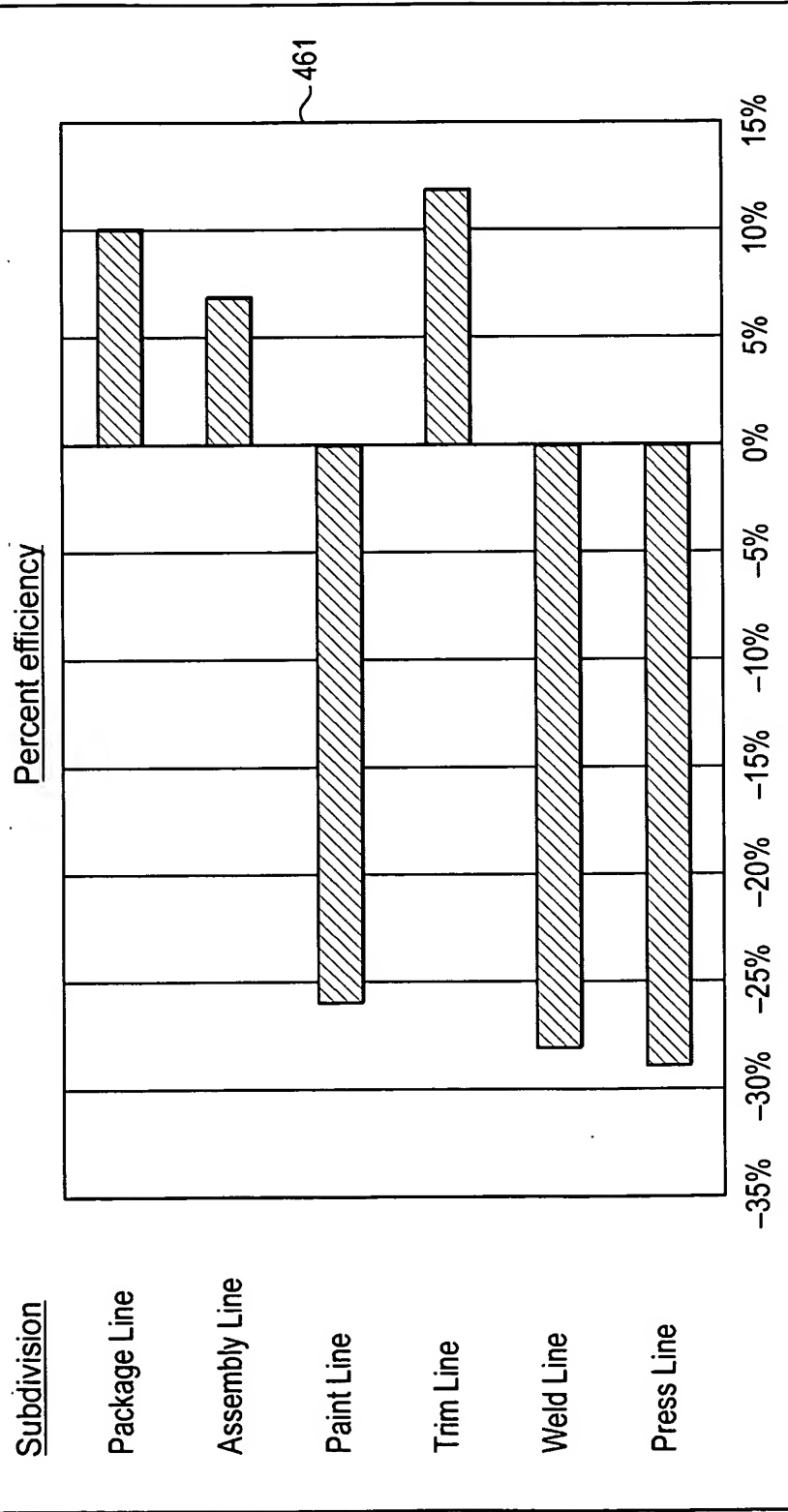


FIG. 15b



# ABC Enterprises Manufacturing Efficiency and Costing

File Company NewProduct Employees Period Analysis

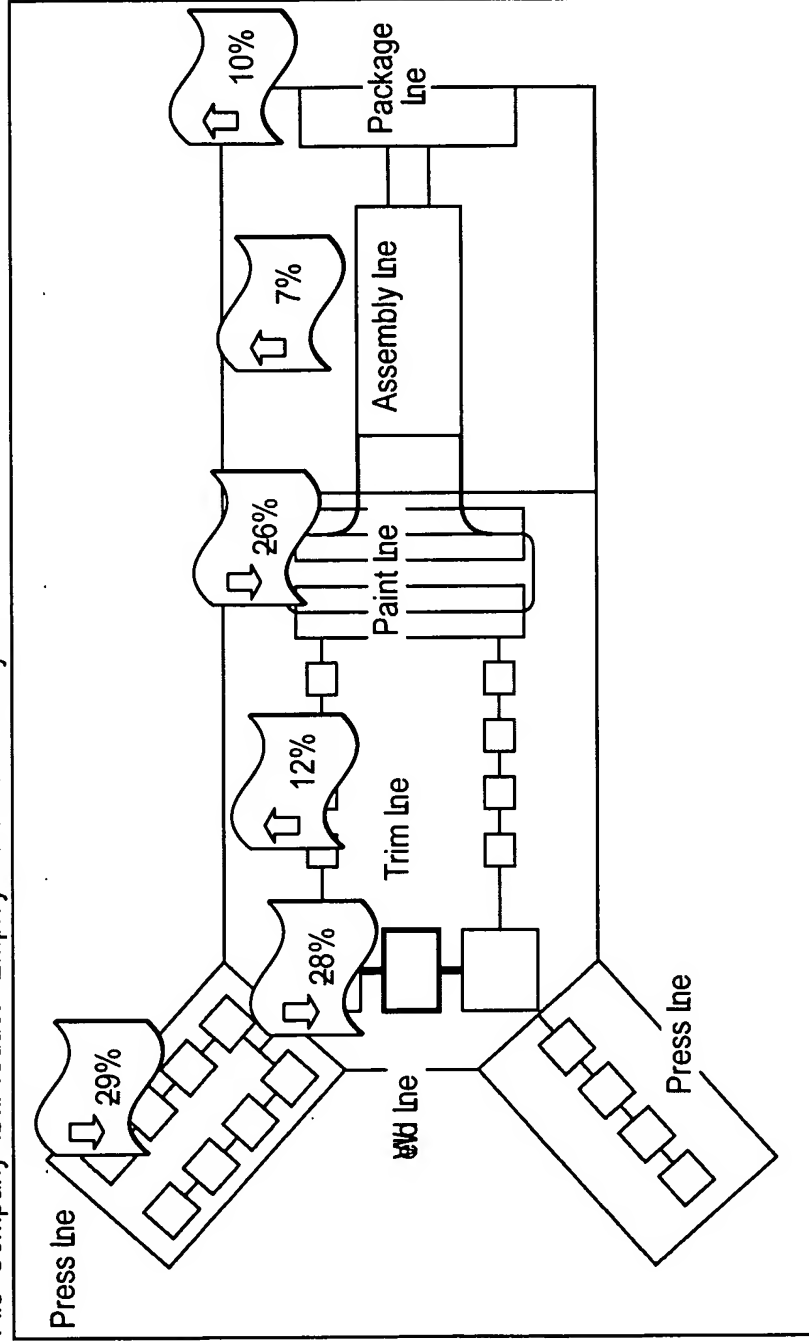


FIG. 15c

470

Employees Utilization and Performance Tracking						
File	Company	Product	Employees	Period	Analysis	
Subdivision #			Date		Shift	
Employee	Post #	Total Time	Active Time	Inactive Time	Efficiency	
John	101	5:36	4:46	0:50	79%	
Mary	102	5:34	5:04	0:30	97%	
Kathy	103	5:05	3:25	1:40	95%	
Jack	104	5:51	5:35	0:16	101%	
Sally	105	2:25	2:40	0:15	105%	
Bob	106	6:07	5:17	0:50	76%	
Jim	110	5:29	4:48	0:41	82%	
Ali-Baba	111	5:44	5:32	0:12	104%	
Tom	112	5:36	4:46	0:50	79%	
Bo	113	5:34	5:04	0:30	97%	
Kit	114	5:05	3:26	1:39	95%	
Ron	115	5:51	5:36	0:15	101%	
Nick	116	2:55	2:40	0:15	105%	
Alex	120	6:07	5:17	0:50	76%	
Jay	121	5:27	4:48	0:41	82%	
Stive	122	5:44	5:32	0:12	104%	
Joe	123	5:29	4:48	0:41	82%	
Baba	124	5:44	5:32	0:12	104%	
Bill	125	5:36	4:46	0:50	79%	
Boss	126	5:34	5:04	0:30	97%	
Tim	127	5:05	3:26	1:39	95%	

FIG. 16a

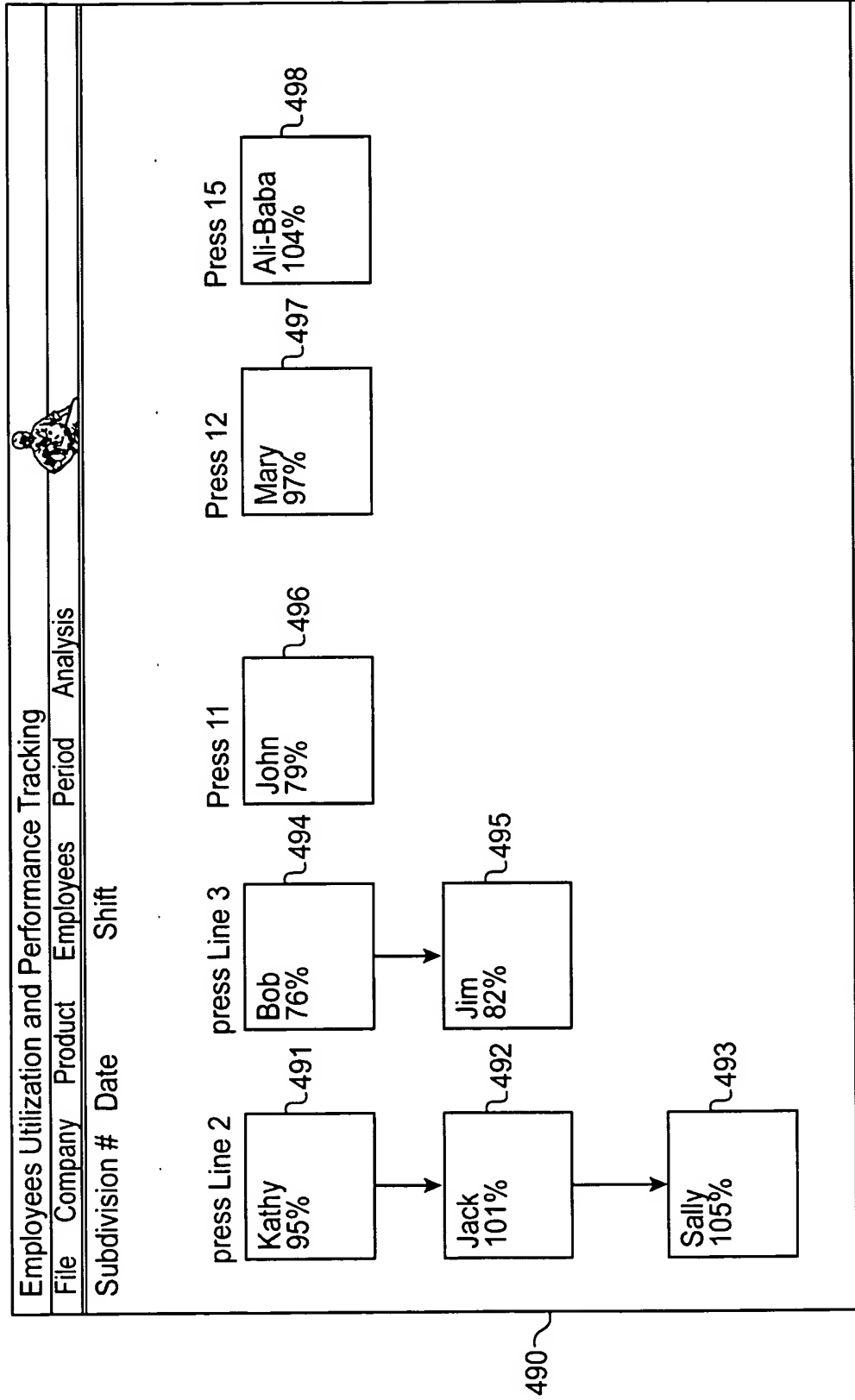
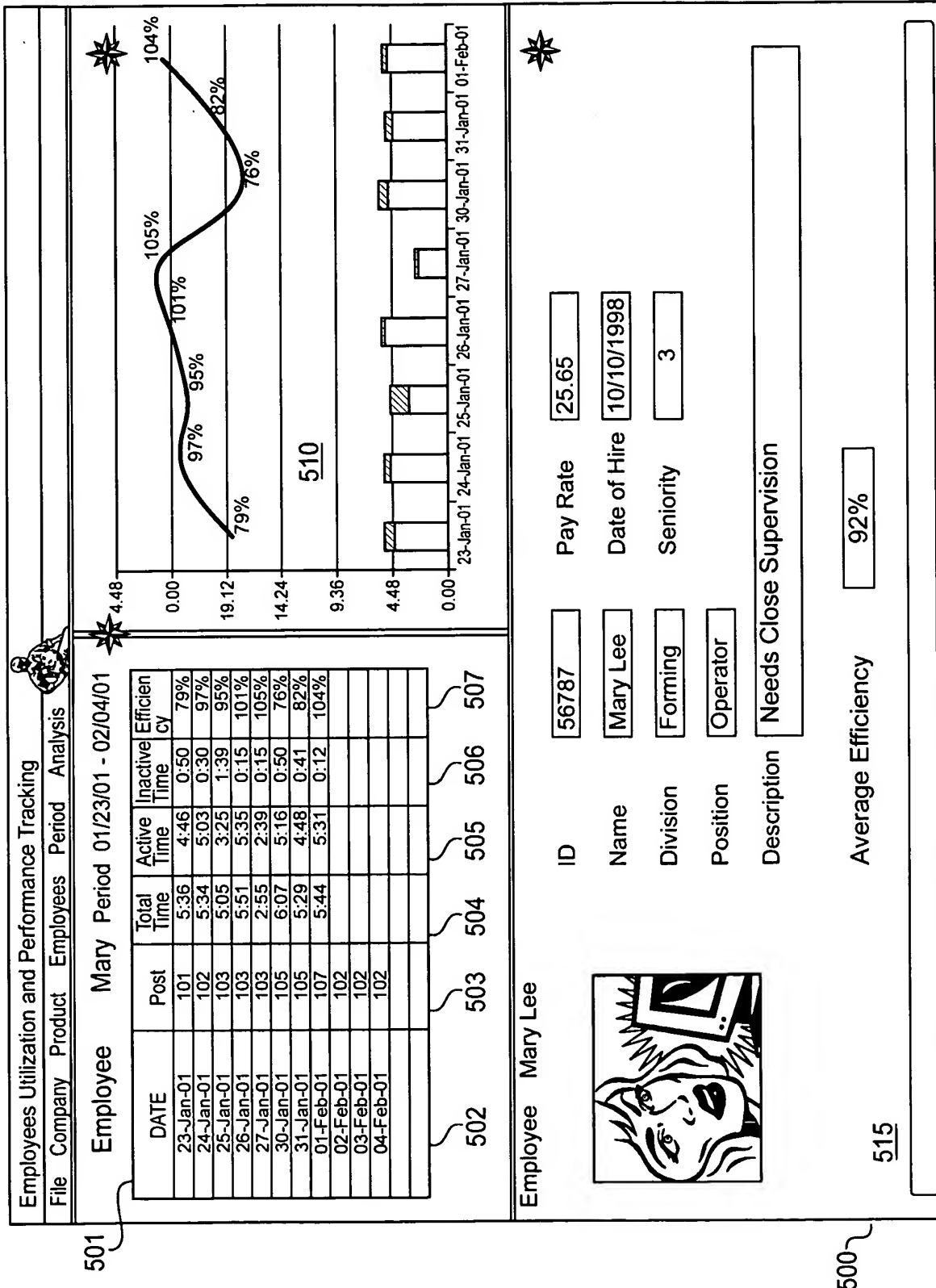


FIG. 16b





Period 01/23/01 - 02/04/01

DATE	Post	Total Time	Active Time	Inactive Time	Efficiency
23-Jan-01	John	5:36	4:46	0:50	79%
24-Jan-01	Mary	5:34	5:03	0:30	97%
25-Jan-01	Kathy	5:05	3:25	1:39	95%
26-Jan-01	Jack	5:51	5:35	0:15	101%
27-Jan-01	Sally	2:55	2:39	0:15	105%
30-Jan-01	Bob	6:07	5:16	0:50	76%
31-Jan-01	Jim	5:29	4:48	0:41	82%
01-Feb-01	Ali-Baba	5:44	5:31	0:12	104%
02-Feb-01					
03-Feb-01					
04-Feb-01					

522

F 101

ID 23456

Name \_\_\_\_\_  
Press \_\_\_\_\_

### Description

200 ton mechanical press

### Average Efficiency

**92%**

527

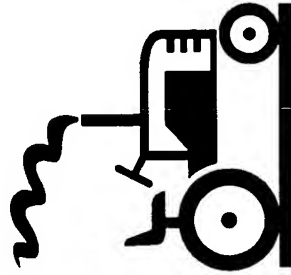
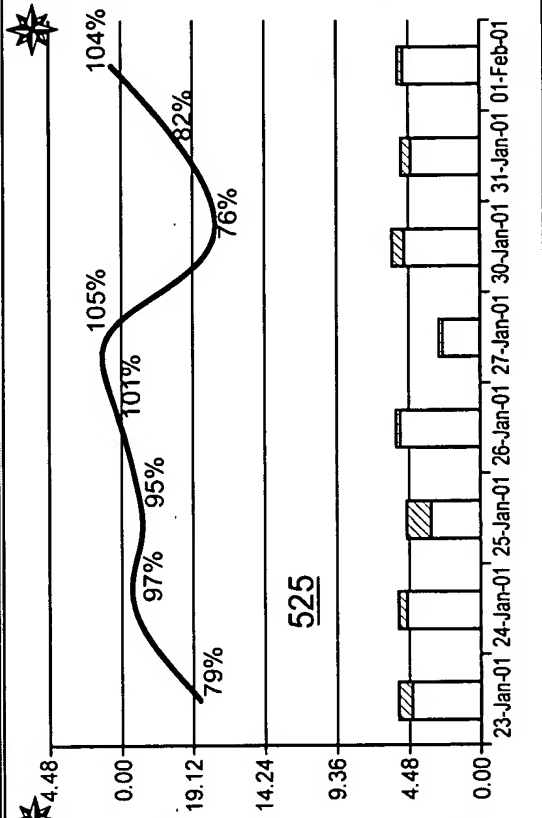


FIG. 16d

Maintenance Efficiency Tracking									
File Company Product Employee Period Analysis									
Date									
Shift									
531									
Post ID	Available Time	Down Time		Repair Time		Reaction Time			
		min	%	min	%	min	%		
1	480	140	29%	112	23%	28	6%	532	539
2	480	53	11%	38	8%	15	3%		
3	480	20	4%	18	4%	2	0%		
4	480	48	10%	41	9%	7	1%		
5	480	6	1%	5	1%	1	0%		
6	480	128	27%	101	21%	27	6%		
7	480	128	27%	101	21%	27	6%		
8	480	12	3%	10	2%	2	0%		
9	480	59	12%	44	9%	15	3%		
10	480	140	29%	112	23%	28	6%		
11	480	53	11%	38	8%	15	3%		
12	480	20	4%	18	4%	2	0%		
13	480	48	10%	41	9%	7	1%		
14	480	6	1%	5	1%	1	0%		
15	480	128	27%	101	21%	27	6%		
16	480	128	27%	101	21%	27	6%		
17	480	12	3%	10	2%	2	0%		
18	480	59	12%	44	9%	15	3%		
19	480	48	10%	41	9%	7	1%		
		534	535	536	537	538	539		
530									

FIG. 17a

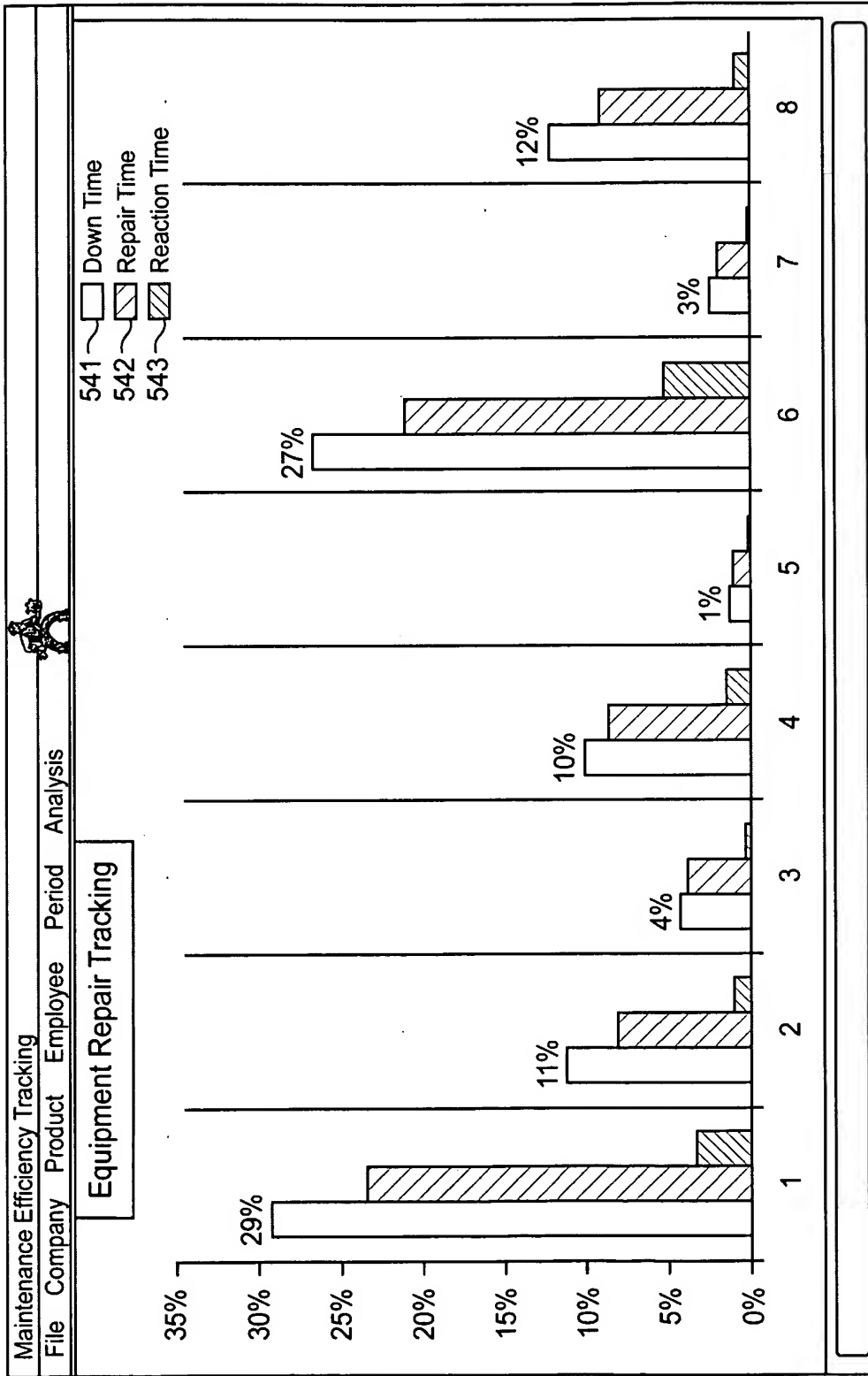


FIG. 17b



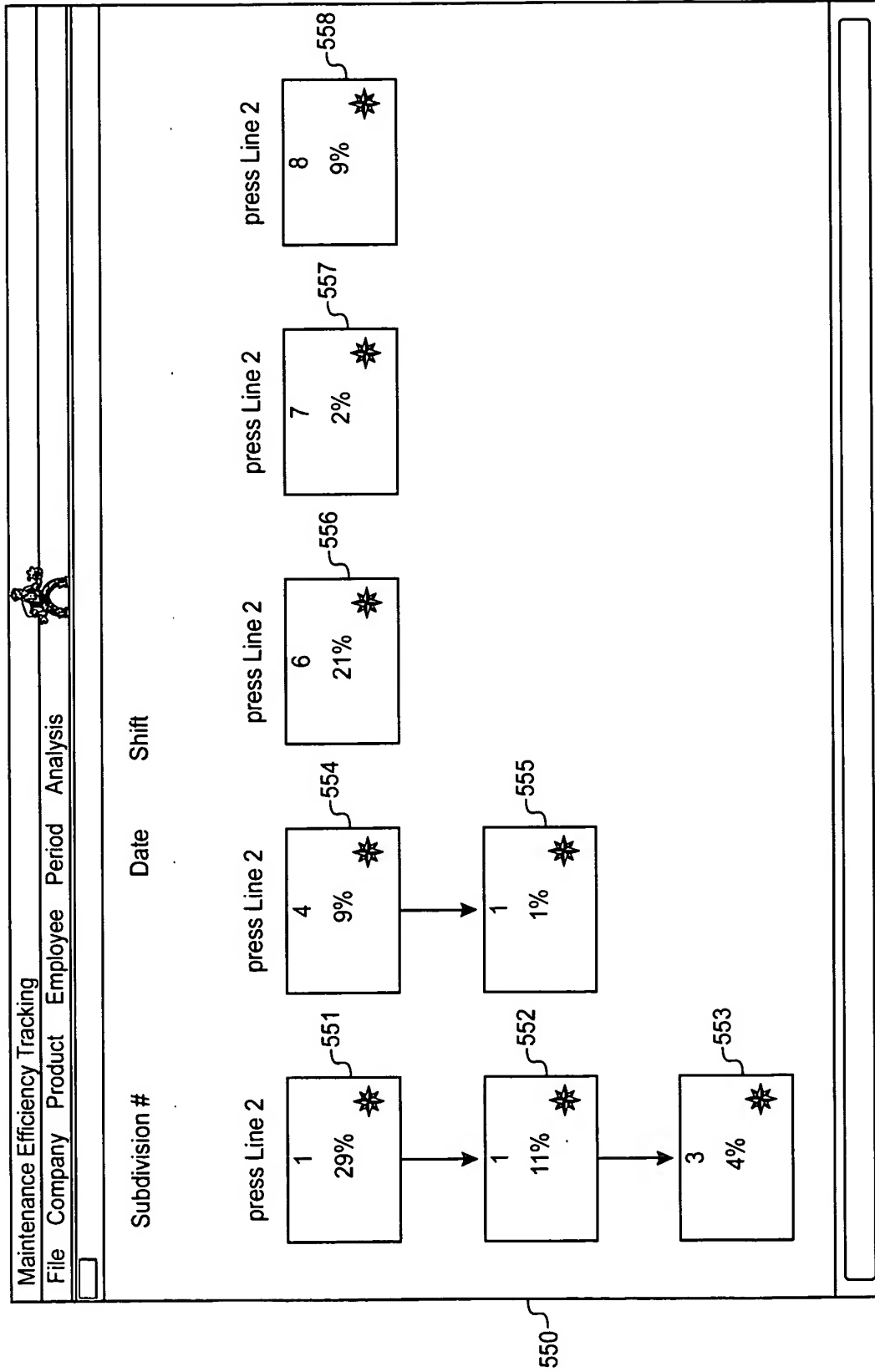


FIG. 17c

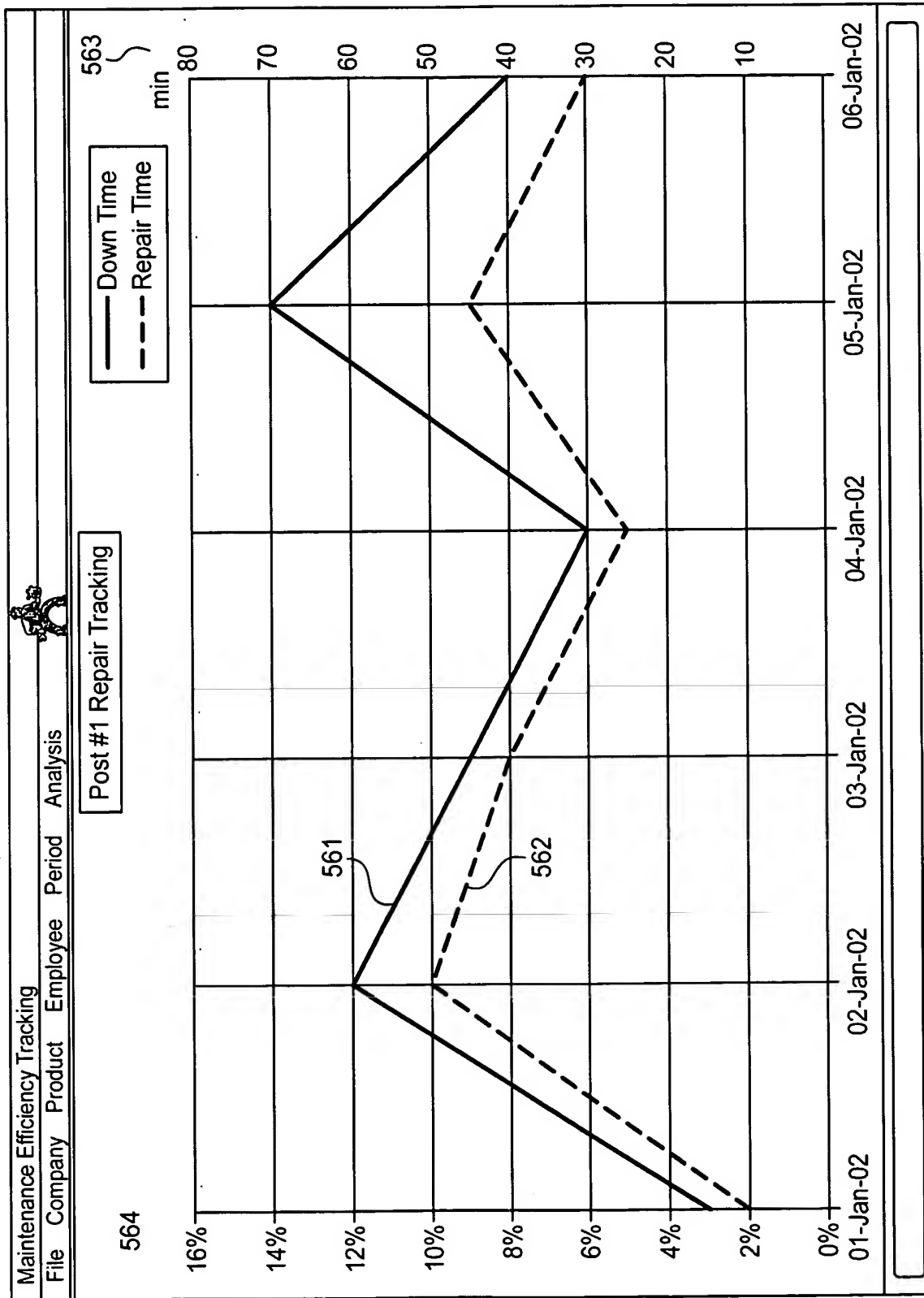


FIG. 17d

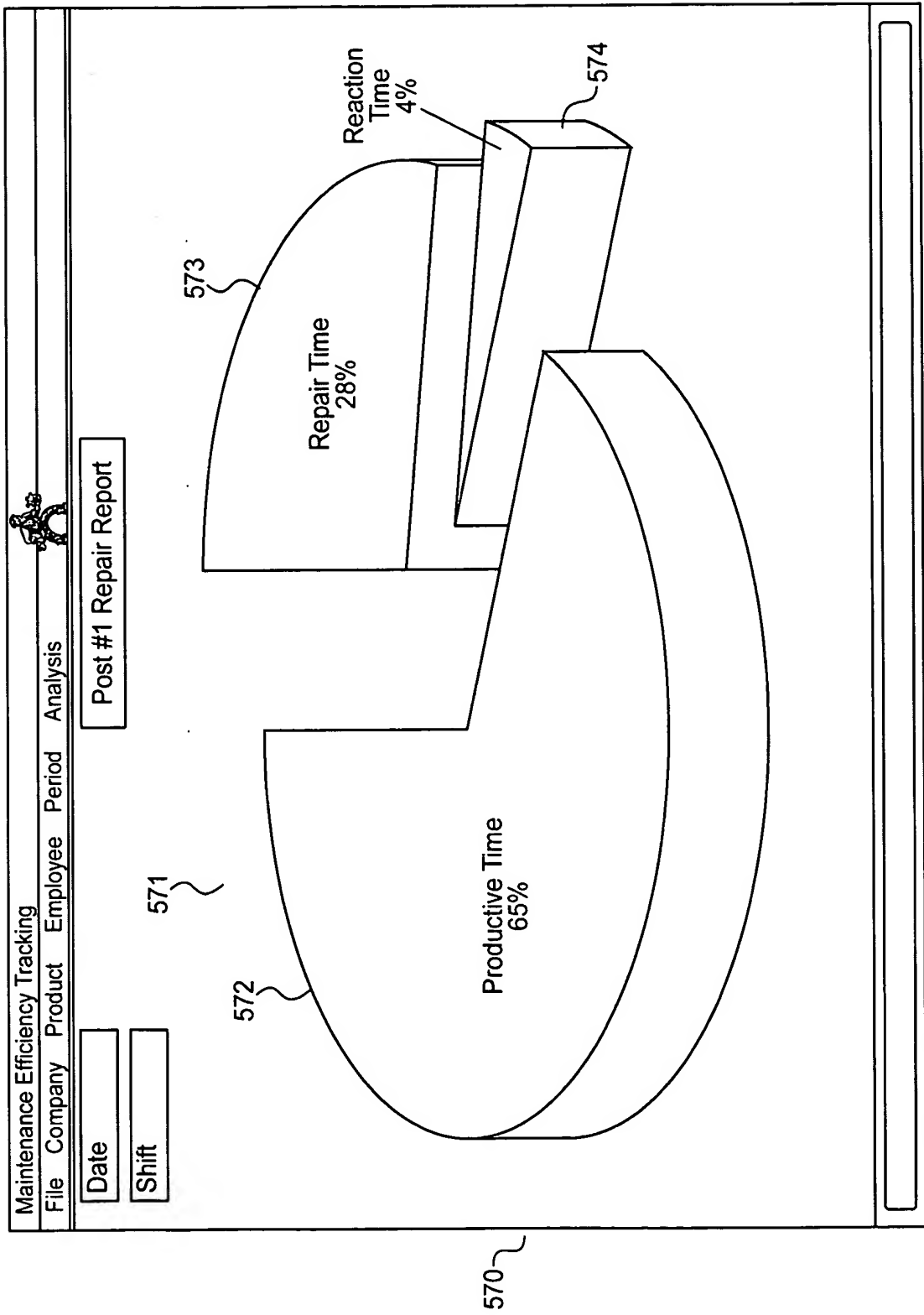


FIG. 17e

Share of Blame															
File Company		Product		Employee Period		Analysis									
Subdivision #				Date		Shift									
Post ID	Schedule av. Time	PT Production RunTime	DOT No Operator	Downtime				Set up time			PMT PM Time	DT Dead Time	Technician		
				DMT No Material	DET Machine Failure	DTT Tool Failure	DQT QC Problem	DUT Undefined	STT Tool/Machine	SMT Material			TID Technician an ID	TRT	
	1	200	180	35%	10%	14%	19%	0%	0%	0%	0%	0%	11%		
	2	200	165	0%	0%	72%	0%	14%	0%	0%	0%	0%	1%		
	3	200	100	15	21%	0%	0%	0%	0%	0%	0%	0%	57%		
	4	200	196	12%	0%	75%	0%	0%	0%	0%	0%	0%	1%		
	5	200	125	15%	10%	0%	36%	17%	0%	0%	0%	0%	18%		
	6	200	177	3%	25%	14%	0%	0%	45%	45%	5%	5%	3%		
	7	200	180	35%	10%	14%	19%	0%	0%	0%	0%	0%	11%		
	8	200	165	0%	0%	72%	0%	14%	0%	0%	0%	0%	1%		
	9	200	100	1%	21%	0%	0%	0%	0%	0%	0%	0%	57%		
	10	200	196	12%	0%	75%	0%	0%	0%	0%	0%	0%	1%		
	11	200	125	15%	10%	0%	36%	17%	0%	0%	0%	0%	18%		
	12	200	177	3%	25%	14%	0%	0%	45%	45%	5%	5%	3%		
	13	200	180	35%	10%	14%	19%	0%	0%	0%	0%	0%	11%		
	14	200	165	0%	0%	72%	0%	14%	0%	0%	0%	0%	1%		
	15	200	100	1%	21%	0%	0%	0%	0%	0%	0%	0%	57%		
	16	200	196	12%	0%	75%	0%	0%	0%	0%	0%	0%	1%		
	17	200	125	15%	10%	0%	36%	17%	0%	0%	0%	0%	18%		
	18	200	177	3%	25%	14%	0%	0%	45%	45%	5%	5%	3%		
	19	200	180	35%	10%	14%	19%	0%	0%	0%	0%	0%	11%		
	20	200	165	0%	0%	72%	0%	14%	0%	0%	0%	0%	1%		
	21	200	100	1%	21%	0%	0%	0%	0%	0%	0%	0%	57%		
	22	200	196	12%	0%	75%	0%	0%	0%	0%	0%	0%	1%		
	23	200	125	15%	10%	0%	36%	17%	0%	0%	0%	0%	18%		
	24	200	177	3%	25%	14%	0%	0%	45%	45%	5%	5%	3%		
	25	200	180	35%	10%	14%	19%	0%	0%	0%	0%	0%	11%		
	26	200	165	0%	0%	72%	0%	14%	0%	0%	0%	0%	1%		
	27	200	100	1%	21%	0%	0%	0%	0%	0%	0%	0%	57%		
	28	200	196	12%	0%	75%	0%	0%	0%	0%	0%	0%	1%		
	29	200	125	15%	10%	0%	36%	17%	0%	0%	0%	0%	18%		
	30	200	177	3%	25%	14%	0%	0%	45%	45%	5%	5%	3%		
581	582	583	584	585	586	587	588	589	590	591	592	593			

FIG. 18a

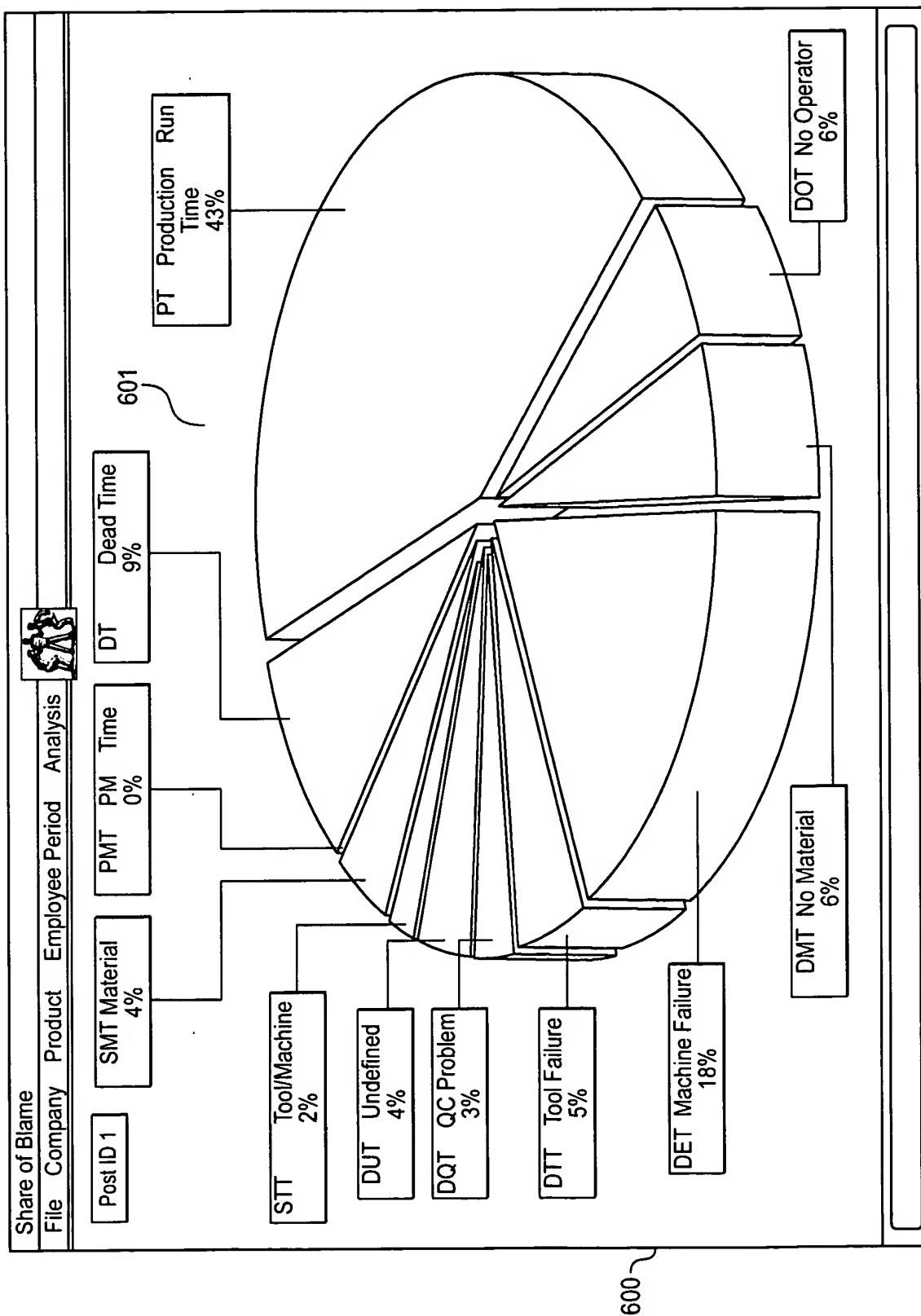


FIG. 18b

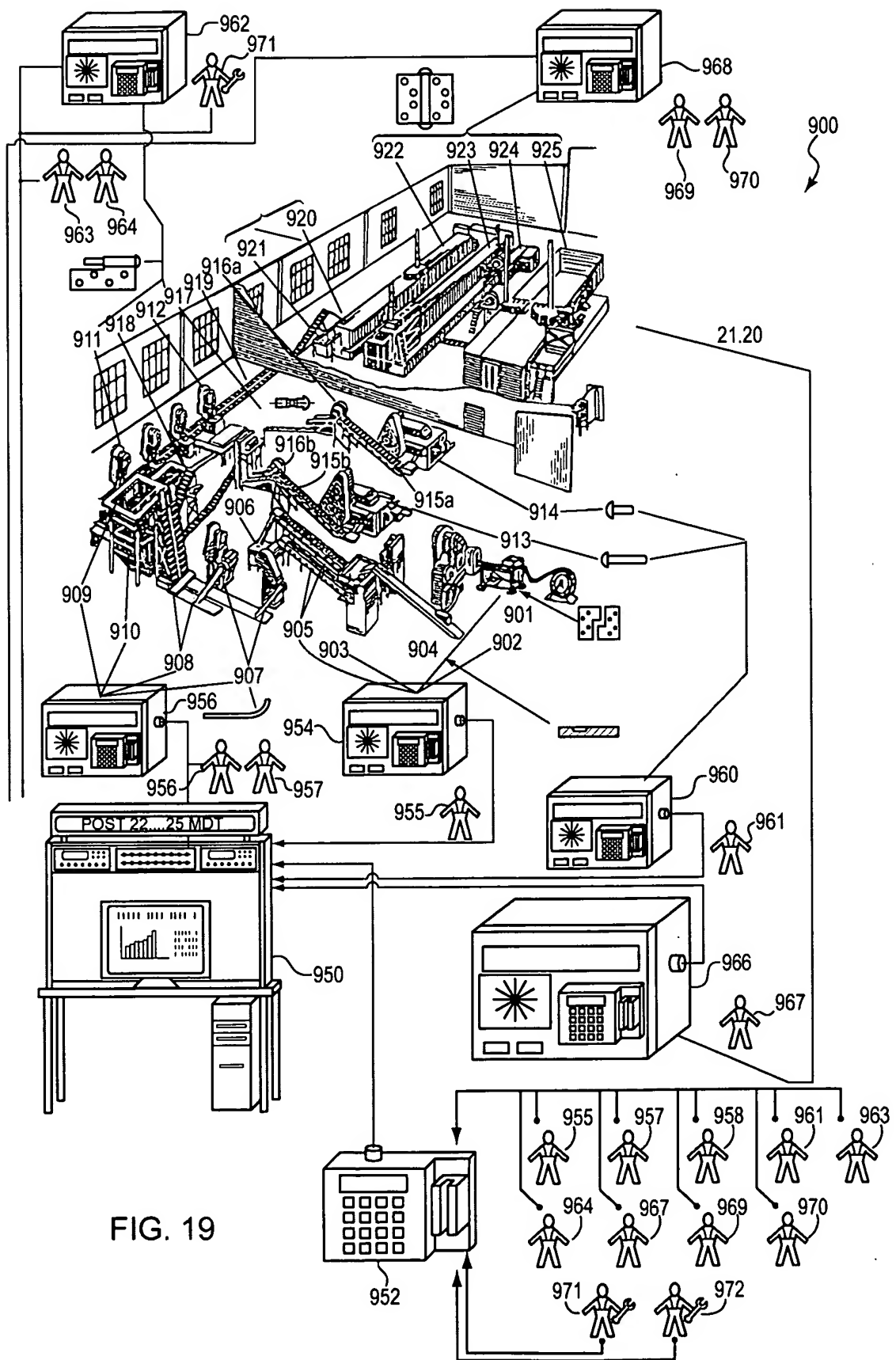


FIG. 19

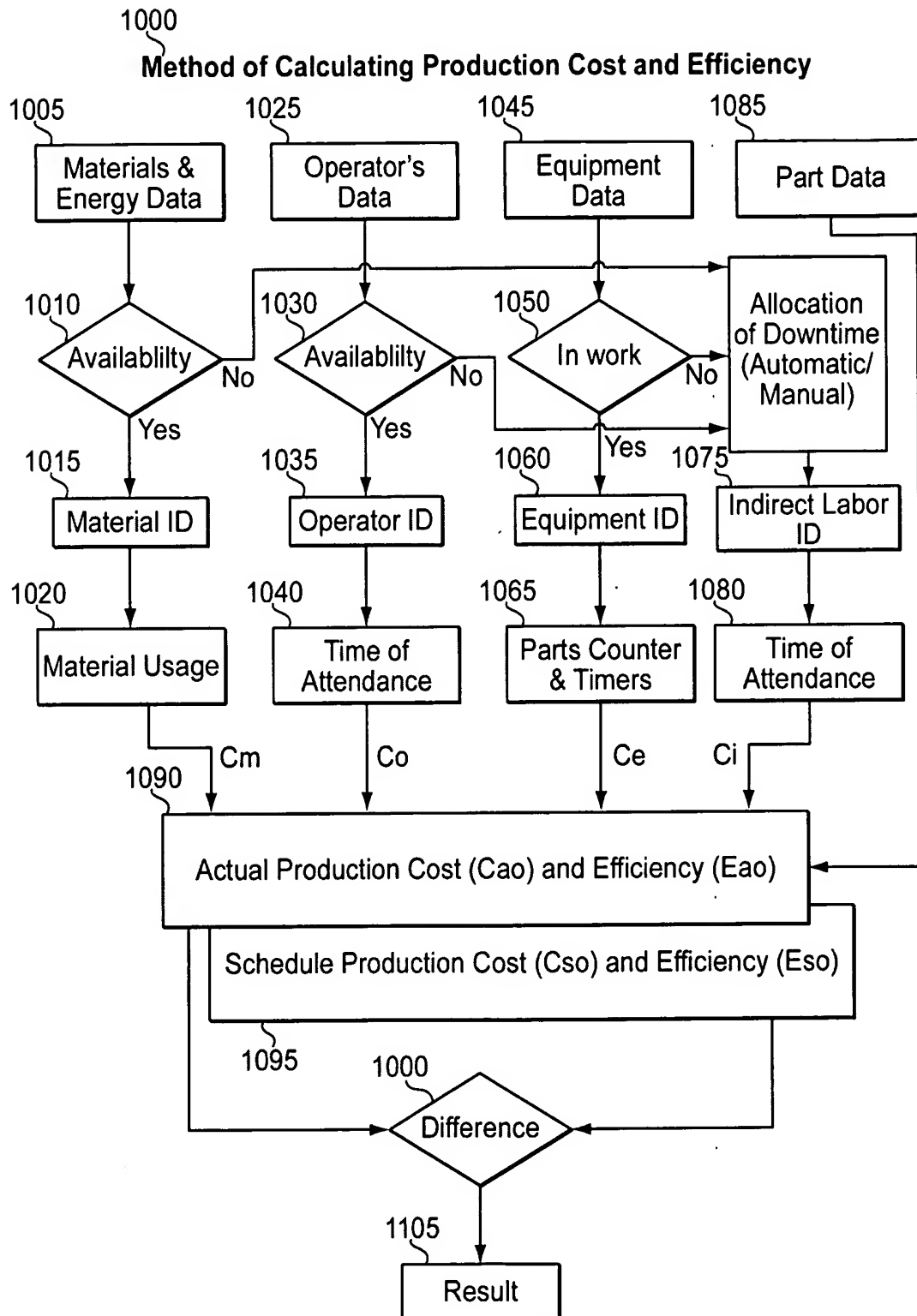


FIG. 20